

CLAIMS

What is claimed is:

1. An isolated polynucleotide encoding a zsig63 polypeptide comprising a sequence of amino acid residues that is at least 90% identical to an amino acid sequence selected from the group consisting of:

(a) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 16 (Arg) to amino acid number 37 (Ser);

(b) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 38 (Leu) to amino acid number 126 (Ala);

(c) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 127 (Pro) to amino acid number 219 (Gln);

(d) the amino acid sequence as shown in SEQ ID NO:2 from amino acid number 16 (Arg) to amino acid number 219 (Gln); and

(e) the amino acid sequence as shown in SEQ ID NO:2 from amino acid number 1 (Met) to amino acid number 219 (Gln).

2. An isolated polynucleotide according to claim 1, wherein the zsig63 polypeptide comprises a sequence of amino acid residues selected from the group consisting of:

(a) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 16 (Arg) to amino acid number 37 (Ser);

(b) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 38 (Leu) to amino acid number 126 (Ala);

(c) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 127 (Pro) to amino acid number 219 (Gln);

(d) the amino acid sequence as shown in SEQ ID NO:2 from amino acid number 16 (Arg) to amino acid number 219 (Gln); and

(e) the amino acid sequence as shown in SEQ ID NO:2 from amino acid number 1 (Met) to amino acid number 219 (Gln).

3. An isolated polynucleotide according to claim 1, wherein the polynucleotide is selected from the group consisting of:

(a) a polynucleotide sequence as shown in SEQ ID NO:1 from nucleotide 173 to nucleotide 784;

(b) a polynucleotide sequence as shown in SEQ ID NO:1 from nucleotide 128 to nucleotide 784; and

(c) a polynucleotide sequence complementary to (a) or (b).

4. An isolated polynucleotide sequence according to claim 1, wherein the polynucleotide comprises nucleotide 1 to nucleotide 657 of SEQ ID NO:3.

5. An expression vector comprising the following operably linked elements:

a transcription promoter;

a DNA segment encoding a zsig63 polypeptide comprising an amino acid sequence that is at least 90% identical to the amino acid sequence shown in SEQ ID NO:2 from amino acid number 16 (Arg) to amino acid number 219 (Gln); and

a transcription terminator.

6. An expression vector according to claim 5, further comprising a secretory signal sequence operably linked to the DNA segment.

7. A cultured cell into which has been introduced an expression vector according to claim 5, wherein the cell expresses a polypeptide encoded by the DNA segment.

8. A DNA construct encoding a fusion protein, the DNA construct comprising:

a first DNA segment encoding a polypeptide selected from the group consisting of:

(b) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 38 (Leu) to amino acid number 126 (Ala);

(c) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 127 (Pro) to amino acid number 219 (Gln);

(d) the amino acid sequence as shown in SEQ ID NO:2 from amino acid number 16 (Arg) to amino acid number 219 (Gln); and

(e) the amino acid sequence as shown in SEQ ID NO:2 from amino acid number 1 (Met) to amino acid number 219 (Gln).

11. An isolated zsig63 polypeptide according to claim 10, wherein the polypeptide comprises a sequence of amino acid residues selected from the group consisting of:

(a) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 16 (Arg) to amino acid number 37 (Ser);

(b) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 38 (Leu) to amino acid number 126 (Ala);

(c) the amino acid sequence as shown in SEQ ID NO: 2 from amino acid number 127 (Pro) to amino acid number 219 (Gln);

(d) the amino acid sequence as shown in SEQ ID NO:2 from amino acid number 16 (Arg) to amino acid number 219 (Gln); and

(e) the amino acid sequence as shown in SEQ ID NO:2 from amino acid number 1 (Met) to amino acid number 219 (Gln).

12. A method of producing a zsig63 polypeptide comprising:
culturing a cell according to claim 7; and
isolating the zsig63 polypeptide produced by the cell.

13. A method of detecting, in a test sample, the presence of an antagonist of zsig63 protein activity, comprising:

transfecting a zsig63-responsive cell, with a reporter gene construct that is responsive to a zsig63-stimulated cellular pathway; and

producing a zsig63 polypeptide by the method of claim 12; and

determining from the comparison, the presence of the antagonist of zsig63 activity in the test sample.

determining from the comparison, the presence of the agonist of zsig63 activity in the test sample.

inoculating an animal with a polypeptide selected from the group consisting of:

(c) a polypeptide comprising amino acid number 16 (Arg) to 37 (Ser) of SEQ ID NO:2;

(d) a polypeptide comprising amino acid number 38 (Leu) to 126 (Ala) of SEQ ID NO:2;

(e) a polypeptide comprising amino acid number 127 (Pro) to 219 (Gln) of SEQ ID NO:2;

(f) a polypeptide comprising amino acid number 16 (Arg) to amino acid number 219 (Gln) of SEQ ID NO:2;

(g) a polypeptide comprising amino acid number 1 (Met) to amino acid number 219 (Gln) of SEQ ID NO:2;

(h) a polypeptide comprising amino acid number 14 (Phe) to 19 (Arg) of SEQ ID NO:2;

(i) a polypeptide comprising amino acid number 16 (Arg) to 21 (Phe) of SEQ ID NO:2;

(j) a polypeptide comprising amino acid number 24 (Gly) to 29 (Asp) of SEQ ID NO:2;

(k) a polypeptide comprising amino acid number 25 (Glu) to 30 (Asp) of SEQ ID NO:2;

(l) a polypeptide comprising amino acid number 187 (Glu) to 192 (Glu) of SEQ ID NO:2;

(m) a polypeptide comprising amino acid number 24 (Gly) to 33 (Pro) of SEQ ID NO:2;

(n) a polypeptide comprising amino acid number 17 (Lys) to 33 (Pro) of SEQ ID NO:2;

(o) a polypeptide comprising amino acid number 66 (Thr) to 73 (Pro) of SEQ ID NO:2;

(p) a polypeptide comprising amino acid number 103 (Pro) to 108 (Gly) of SEQ ID NO:2;

(q) a polypeptide comprising amino acid number 190 (Ala) to 197 (Glu) of SEQ ID NO:2;

(r) a polypeptide comprising amino acid number 202 (Lys) to 215 (Gly) of SEQ ID NO:2; and

(s) a polypeptide comprising amino acid number 190 (Ala) to 215 (Glu) of SEQ ID NO:2; and

the antibody; and

isolating the antibody from the animal.

- zsig63 polypeptide.

- antibody.

18. An antibody that binds to a polypeptide of claim 10.